

**TECHNICAL REVIEW DOCUMENT**  
**For**  
**MODIFICATION TO OPERATING PERMIT 99OPAR217**

Waste Management of Colorado – Denver Arapahoe Disposal Site (DADS)  
Arapahoe County  
Source ID 0051291

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**I. Purpose:**

This document establishes the decisions made regarding the requested modifications to the Operating Permit for the DADS landfill. This document provides information describing the type of modification and the changes made to the permit as requested by the source and the changes made due to the Division's analysis. This document is designed for reference during review of the proposed permit by EPA and for future reference by the Division to aid in any additional permit modifications at this facility. The conclusions made in this report are based on the information provided in the original request for modification submitted to the Division on February 23, 2010, various e-mail correspondence and telephone conversations with the source. Please note that copies of the Technical Review Document for the original permit and any Technical Review Documents associated with subsequent modifications of the original Operating Permit may be found in the Division files as well as on the Division website at <http://www.cdphe.state.co.us/ap/Titlev.html>.

Any revisions made to the underlying construction permits associated with this facility made in conjunction with the processing of this operating permit application have been reviewed in accordance with the requirements of Regulation No. 3, Part B, Construction Permits, and have been found to meet all applicable substantive and procedural requirements. This operating permit incorporates and shall be considered to be a combined construction/operating permit for any such revision, and the permittee shall be allowed to operate under the revised conditions upon issuance of this operating permit without applying for a revision to this permit or for an additional or revised Construction Permit.

**II. Description of Permit Modification Request/Modification Type**

The renewal operating permit for the DADS landfill was issued on August 1, 2007. DADS has also obtained a construction permit (06AR1264) to cover four landfill gas fueled engines which operate at DADS to generate electricity. This construction permit Initial Approval was issued 04/30/2007. The construction permit has been modified twice and was most recently re-issued 08/19/2009.

DADS submitted this minor modification application to add an additional candlestick utility flare to the operating permit. This flare will be used to combust excess landfill gas not utilized by the gas to energy plant (the four engines). DADS will be able to combust low gas flows more efficiently with this flare, as compared to the larger existing enclosed flare. The enclosed flare will remain to combust larger volumes of landfill gas should any of the engines be offline.

DADS also submitted a separate modification application (July 16, 2009) intended to incorporate the requirements of construction permit 06AR1264 (gas to energy plant) into the operating permit. This application will be processed separately from this minor modification, as a significant modification.

Colorado Regulation No. 3, Part C, Section X.A identifies those modifications that can be processed under the minor permit modification procedures. Specifically, minor permit modifications “are not otherwise required by the Division to be processed as a significant modification” (Colorado Regulation No. 3, Part C, Section X.A.6). The Division requires that “any change that causes a significant increase in emissions” be processed as a significant modification (Colorado Regulation No. 3, Part C, Section I.B.36.h.(i)). Since requested emissions are below PSD significance levels, the Division agrees that this modification qualifies as a minor modification.

### **III. Discussion of Modifications Made**

#### **Source Requested Modifications**

The Division addressed the source’s requested modifications as follows:

##### **Update the Responsible Official**

Steve Derus is now identified as the Responsible Official.

##### **New Candlestick Utility Flare (UTFL-001)**

The source requested that approval be given to install and operate the following flare:

#### **Unit UTFL-001, 600 cfm Perennial Energy Candlestick Utility Flare.**

**Applicable Requirements** - DADS has requested that the Division approve the construction and operation of this flare. Since the source has requested that this flare be processed as a combined construction/operating permit using the minor modification procedures in Reg 3, Part C, Section X, no construction permit will be issued and all applicable requirements will be incorporated directly into the operating permit with this modification. The applicable requirements for this unit are as follows:

- Landfill Gas consumption shall not exceed 177,612.48 mmBtu/yr (as requested by APEN submitted February 23, 2010).

- Emissions of air pollutants shall not exceed the following limitations (as requested by APEN submitted February 23, 2010):
  - o PM<sub>10</sub> 1.49 tons/yr
  - o TSP 1.49 tons/yr
  - o SO<sub>2</sub> 1.23 tons/yr
  - o NO<sub>x</sub> 6.04 tons/yr
  - o CO 32.86 tons/yr
  - o VOC 0.91 tons/yr

Note that since this flare is a true minor source, the Division does not require that monthly emission and fuel consumption limits be imposed on this source for the first year of operation as this requirement only applies for major or synthetic minor sources.

- The BTU and methane content of the landfill gas shall be determined at least every six months. These parameters will be used to estimate pollutant emissions from the flare. The most recent analytical results shall be used in the applicable emission calculations and compliance determinations.
- The flare shall be operated to control emissions of VOC and HAPs by at least 98.0%. Compliance with the flare requirements of 40 CFR §60.18 and the requirements of the Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills shall be used to demonstrate compliance with this requirement.
- The flare shall comply with the design and operational requirements of 40 CFR §60.18. This includes:
  - o No visible emissions
  - o Flame present at all times
  - o Heat content & tip velocity specifications, or other design and operation requirements.
- Comply with the Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills.
- 30% Opacity limit (Colorado Regulation No.1, II.A.5). Note that 40 CFR §60.18 requires operation with no visible emissions, which is more stringent.
- Comply with the National Emission Standards for Hazardous Air Pollutants, Municipal Solid Waste Landfills. This applies to the entire landfill and is not a new requirement for purposes of considering this application a minor modification.

- RACT applies to this flare since it is new and located in the Denver Metro area (Regulation No. 3, Part B, III.D.2.a). Applying RACT to a control device is difficult since the flare is being requested to control landfill gas emissions. The Division considered compliance with the requirements of the Emission Guidelines for Municipal Solid Waste Landfills and the flare requirements of 40 CFR §60.18 to satisfy the RACT requirement.
- Construction of this source must commence within 18 months of initial approval permit issuance date or within 18 months of date on which such construction or activity was scheduled to commence as stated in the application (Reg 3, Part B, Section IV.G.4.a.(i) thru (ii)).
- Within 180 days after commencement of operation, compliance with the conditions contained on this permit shall be demonstrated to the Division (Reg 3, Part B, Section IV.H.2).
- The permittee shall notify the Division, in writing, thirty (30) days prior to startup (Reg 3, Part B, Section IV.H.1).

The Compliance Assurance Monitoring (CAM) requirements (40 CFR Part 64, as adopted by reference in Colorado Regulation No. 3, Part C, Section XIV) do not apply to this flare since the flare is subject to the Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills, and is specifically exempt from CAM per 64.2(b)(1)(i).

**Emission Factors** – The flare combusts landfill gas to control VOC & HAP emissions by at least 98.0%. Combustion emissions are also produced from the flare. The source has proposed to use the following emission factors.

Pollutant	Emission Factor	Source
VOC	Calculation from AP-42 2.4 & 98% control	AP-42 2.4
HAPs	Calculation from AP-42 2.4 & at least 98% control	AP-42 2.4
SO <sub>2</sub>	Calculation from AP-42	AP-42 2.4
TSP	17 lb/mmdscf methane	AP-42 2.4
PM <sub>10</sub>	17 lb/mmdscf methane	AP-42 2.4
CO	0.37 lb/mmbtu	Manufacturer
NO <sub>X</sub>	0.068 lb/mmbtu	Manufacturer

**Monitoring Plan** – DADS will be required to monitor and record landfill gas combustion and calculate emissions monthly. In addition, BTU and methane content of the landfill gas must be determined at least every six months. These parameters are used to estimate emissions.

DADS shall conduct a visible observation of the flare on a weekly basis to determine if visible emissions are being generated. A two hour Method 22 reading will be required if any visible emissions are witnessed during the weekly observation. At least one Method 22 observation must be conducted annually. This monitoring is being required

to demonstrate compliance with the 40 CFR §60.18 requirement to operate with no visible emissions.

No opacity observation requirements were included under Condition 3.7 (Colorado Regulation No. 1 30% opacity limit) since the 40 CFR §60.18 opacity requirement was more stringent and the Division has included opacity monitoring as outlined above.

### **Other Modifications**

In addition to the requested modifications made by the source, the Division used this opportunity to include changes to make the permit more consistent with recently issued permits, include comments made by EPA on other Operating Permits, as well as correct errors or omissions identified during inspections and/or discrepancies identified during review of this modification.

The Division has made the following revisions, based on recent internal permit processing decisions and EPA comments on other permits, to the DADS Operating Permit with the source's requested modifications.

### **Section I – General Activities and Summary**

Updated the PSD/NSR designations in Condition 3.1.

### **Section IV – General Permit Conditions**

Updated the General Conditions to the current version.

### **Appendices**

Added the new flare to the tables in Appendices B and C.